

REMARKS

Interview Summary

This is a summary of the Examiner interview of March 9, 2009, between Examiner Diana Johannsen and Applicant's representative. This summary is being filed with the written reply to the last Office Action and thus is timely filed.

Applicants' representative and the Examiner discussed the two references, numbers 17 and 18, that the Examiner had not considered from the previously filed Information Disclosure Statement. The Examiner indicated in the Office Action that these references were not considered because the information on the 1449 form for those citations was incomplete. Specifically, no date was provided for the references and the dates on the references themselves were truncated.

Applicants' representative indicated that the references were originally cited by the Examiner in a divisional application on an 892 form and that Applicants had cited these references in the present case exactly as they had been cited in the divisional case.

The Examiner indicated that she would consider the references and attempt to determine their dates.

Objections to the Specification and Claims

The Examiner has objected to the specification for containing an embedded hyperlink at p. 18. Applicants have amended the specification to remove this hyperlink and, therefore, this objection has been obviated and should be withdrawn. Although not specifically objected to by the Examiner, Applicants have also amended the specification at p. 15 to remove an additional hyperlink at that location. Please note that the underlining under the hyperlinks was present in the original and does not indicate added text in this amendment.

The Examiner has objected to claims 40, 41 and 44 for typographical errors in claims 40 and 44. Accordingly, claims 40, 41 and 44 have been amended to correct the typographical errors. Therefore, these rejections have been obviated and should be withdrawn. Claim 40 also has additional amendments which will be discussed below.

Claim Amendments

Without conceding to the Examiner's positions and solely in the interest of expediting prosecution, the following claim amendments have been made. However, Applicants reserve the right to re-introduce any amended/deleted subject matter at any time during the proceedings and/or in one or more divisional applications.

Claims 25 and 26 have been amended to recite "wherein the ditag comprises sequence information including the 5' start and 3' end of a full-length coding region of a gene.

Claim 39 has been amended to recite "full-length" coding sequence of a full-length cDNA transcript, "full-length" coding region of a gene" and "the structural region including exons and introns of the corresponding gene" as indicated. Claim 40 has been amended to recite "of a full-length coding sequence of a full-length cDNA transcript." Written description support for the amendments relating to "full-length coding sequence of a full-length cDNA transcript" and "full-length coding region of a gene" is inherently disclosed from at least at para. 101 of the published specification and Figures 1 and 2.

Claim 40 has been amended to correct typographical errors.

Claim 41 has been amended to recite "a full-length cDNA" instead of "the full-length cDNA."

Claim 44 has been amended to correct the typographical error in "cDNA".

Claim 48 has been amended to delete "wherein the vector comprises at least a full-length cDNA transcript and two adapters flanking the full-length cDNA transcript".

Claims 28, 51-52 and 54 have been deleted.

The applicant submits that the amendments do not include added subject matter.

Rejections under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claim 28 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner argues that claim 28 has been amended to state that the concatemer of ditags are 1-1000 ditags. The Examiner argues that it is not clear how this claim further limits claim 26 from which it indirectly depends, as claim 26 is directed to a concatemer which consists of a single ditag. Claim 28 has been canceled and, therefore, this rejection has been obviated and should be withdrawn.

The Examiner has rejected claim 39 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner argues that claim 39 has been amended to include the term “defining” and that it is not clear what is meant by “defining a gene on a genome map.” Claim 39 has been amended to recite “defining the structural region including exons and introns of the corresponding gene.” From these claim amendments, one of skill in the art would understand that claim 39 is directed to identifying the location in the genome of the sequences which ultimately gave rise to the ditag. There is written description support for these amendments in the specification at

least at p. 6, ll. 14-15, p. 7, ll. 13-14, and Figures 1 and 2.

The Examiner has rejected claim 41 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner argues that there is insufficient antecedent basis for the claim element "the full-length cDNA corresponding to the ditag." Claim 41 has been amended to recite "a full-length cDNA" instead of "the full length cDNA" and, therefore, it is submitted that the indefiniteness objection is obviated and should be withdrawn.

Rejections under 35 U.S.C. § 112, first paragraph

The Examiner has rejected claims 48-49 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. The Examiner argues that the previous amendments to claim 26 and 48 require both a ditag flanked by adapters and a full-length cDNA flanked by adapters. The Examiner argues further that the former embodiment does have written description support in the specification, but the latter does not. Claim 48 has been amended to remove the claim language which could be directed to the latter embodiment; that is, the claim has been amended to remove the reference to full-length cDNA being flanked by adapters. Therefore, this rejection has been obviated and should be withdrawn.

Rejections under 35 U.S.C. § 102(b)

The Examiner has rejected claims 25-29, 31, 33-35, 37-38, 44-49 and 53 under 35 U.S.C. § 102(b) as being anticipated by Macevicz (US Pat. No. 6,136,537). Macevicz is directed to a method for analyzing the frequency of sequences in a population of polynucleotides. The Examiner argues that Macevicz discloses a modification of the serial analysis of gene expression (SAGE) method where pairs of sequence tags are generated from each end of a target polynucleotide, including full-length cDNAs, thus anticipating independent claims 25 and 26.

Independent claims 25 and 26 have been amended to require that the ditag comprises sequence information including the 5' start and 3' end of a full-length coding region of a gene. These claim amendments serve to further distinguish the subject matter of the present claims from the disclosure of Macevicz. Attached to this response, as Attachment A, is a Rule132 declaration of Dr. Bing Ren in which the differences between Macevicz and the present claims are discussed in detail. Dr. Ren's Curriculum Vitae is also attached to this response as Attachment B. The declaration details Dr. Ren's professional education and experience and clearly demonstrates that Dr. Ren is one of skill in the art in the fields relevant to the presently claimed subject matter, including molecular biology and biochemistry.

This declaration includes detailed information sufficient to address this anticipation rejection. Briefly, Macevicz does not disclose the preparation of ditags which include the information from the 5' start and 3' end of a full-length genomic coding region, as in the present claims. Rather, the method of Macevicz produces a pair of sequence tags in which one tag consists of a segment of the poly A tail of the cDNA. This tag corresponding to the poly A tail cannot provide sequence information about the 3' end of the coding region of a gene. As a result, Macevicz cannot anticipate the presently amended claims 25 and 26 and this rejection should be withdrawn.

Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected claim 32 under 35 U.S.C. § 103(a) as being obvious over Macevicz (US Pat. No. 6,136,537) in view of Saha (Nature Biotechnology 19:508-512, 2002). Macevicz is discussed above. Saha is directed to a long serial analysis of gene amplification method that can be used to identify novel genes and exons. The Examiner argues that Macevicz discloses all of the elements of claim 32 except mapping ditag sequences to a database comprising genomic sequences. The Examiner argues further that Saha discloses querying the human genome database to determine the genes corresponding to the tags and that, therefore, the combination of Macevicz and Saha renders obvious present claim 32.

The Ren declaration includes detailed information sufficient to address this obviousness rejection. Briefly, as discussed above, Macevicz does not disclose the preparation of ditags from full-length cDNA transcripts as required by claim 32, which depends from claim 26. The Saha reference discloses the preparation of single tags only, not ditags, and does not teach the mapping of ditags. Therefore, the combination of Macevicz and Saha cannot render obvious claim 32, and, consequently, this rejection should be withdrawn.

The Examiner has rejected claim 36 under 35 U.S.C. § 103(a) as being obvious over Macevicz (US Pat. No. 6,136,537) in view of Belfort (Nucleic Acid Research 25(17):3379-3388, 1997). Macevicz is discussed above. Belfort is directed to the structure and function of four families of homing endonucleases, which are rare cutting enzymes. The Examiner argues that Macevicz discloses all of the elements of claim 36 except for the use of a homing endonuclease asymmetric recognition site sequence. The Examiner argues further that Belfort discloses the use of homing endonucleases and that, therefore, the combination of Macevicz and Belfort renders obvious present claim 36.

The Ren declaration includes detailed information sufficient to address this obviousness rejection. Briefly, as discussed above, Macevicz does not disclose the preparation of ditags from full-length cDNA transcripts as required by claim 36, which depends from claim 26 through linking claims. Belfort only discusses the use of homing

endonucleases in general and contains no disclosures relevant to the preparation of ditags from full-length cDNA transcripts. Therefore, the combination of Macevicz and Belfort cannot render obvious claim 36, and, consequently, this rejection should be withdrawn.

The Examiner has rejected claim 39 under 35 U.S.C. § 103(a) as being obvious over Macevicz (US Pat. No. 6,136,537) in view of Macevicz (U.S. Pat. No. 6,054,276; hereinafter referred to as Macevicz II). Macevicz is discussed above. Macevicz II is directed to a method of developing a high resolution physical map of a polynucleotide. The Examiner argues that Macevicz II discloses all of the elements of claim 39 except for the use of a cDNA which corresponds to the full-length of a gene. The Examiner argues further that Macevicz explicitly teaches the use of full-length cDNAs in those methods and that, therefore, the combination of Macevicz II and Macevicz renders obvious present claim 39.

The Ren declaration includes detailed information sufficient to address this obviousness rejection. Briefly, as discussed above, Macevicz II discloses methods of constructing a physical map of polynucleotide sequences. Macevicz II, like Macevicz, does not disclose the use of full-length cDNA transcripts, as is required by present claim 39. Therefore, the combination of Macevicz and Macevicz II cannot render obvious claim 39, and, consequently, this rejection should be withdrawn.

The Examiner has rejected claims 40-41 under 35 U.S.C. § 103(a) as being obvious over Macevicz (US Pat. No. 6,136,537) in view of Macevicz II (U.S. Pat. No. 6,054,276) and further in view of Saha (Nature Biotechnology 19:508-512, 2002). Macevicz, Macevicz II and Saha are discussed above. The Examiner argues that Macevicz and Macevicz teach all of the elements of each of these claims except for the “detecting no match on one or more gene database” element of claim 40 and the “recovering the full-length nucleic acid molecule” element of claim 41. The Examiner argues further that Saha teaches these missing elements, and that, therefore, the combination of Macevicz II, Macevicz and Saha renders obvious present claims 40-41.

The Ren declaration includes detailed information sufficient to address this obviousness rejection. Briefly, as discussed above, Macevicz does not disclose the preparation of ditags from full-length cDNA transcripts as required by claims 40 and 41. Likewise, neither Macevicz II nor Saha disclose the use of full-length cDNA transcripts. As such, the combination of Macevicz, Macevicz II and Saha cannot render obvious claims 40 and 41.

Double Patenting Rejection

Claim 25 has been provisionally rejected on the ground of non-statutory obviousness-type double-patenting as being unpatentable over claims 1-19 and 24-25 of copending application No. 11/045,468. Applicants previously have requested that

this rejection be held in abeyance until claims of the present application have been found to be in condition for allowance. If at that time the rejection still stands, Applicants will file a terminal disclaimer if appropriate.

Corresponding Japanese Application

Applicants hereby notify the Examiner of the acceptance of the corresponding Japanese application for issue. Applicants have attached, as Attachment C, a copy of the accepted claims for the Examiner's review. Applicants request that the Examiner consider the accepted Japanese claims to the extent that they are relevant to the present proceeding.

Applicants respectfully submit that the claims under examination are in condition for allowance.

Please charge any additional fees to Deposit Account No. 02-2135.

Respectfully submitted,

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